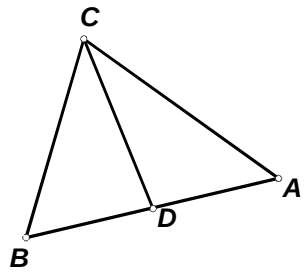
GEOMETRY Name _____

Period _____ Date _____

SEMESTER 1 FINAL REVIEW
WORKSHEET #3

CHAPTER 5 – RELATIONSHIPS WITHIN TRIANGLES

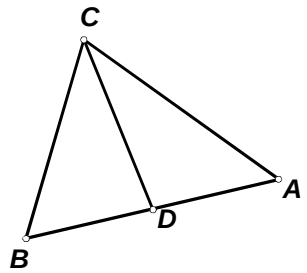
1 .If $\overline{CD}$ is an ***angle bisector*** of ΔABC, **mark** the triangle and **find** x,



$m\angle BCD = 4x+3$

$m\angle ACD = 1+5x$

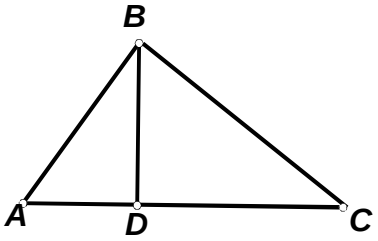
2. If $\overline{CD}$ is a ***median*** of ΔABC, **mark** the triangle and **find** BD, and AB.



BD = 5x + 9

AD = 12 + 4x

3. Given that $\overline{BD}$ is an ***altitude*** of ΔABC, **find** x, AD and AC if $m\angle BDC = 12x-30$, AD $= 4x-8$, and DC $= 3x+5$.

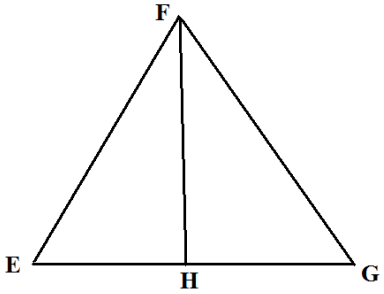


x = _____

AD = _____

AC = _____

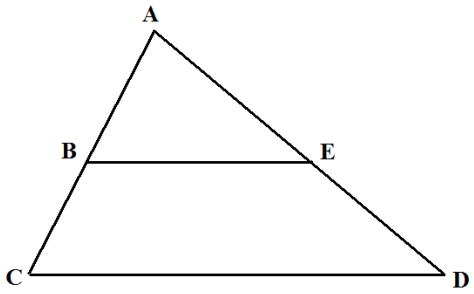
4. If $\overline{FH}$ is a ***perpendicular bisector*** and $\angle FHG = 5x-15$, then **find** x and the measure of $\overline{EG}$ if $EH = x-3$



x = _____

$\overline{EG}$ = _____

5. Given that $\overline{BE}$ is a ***midsegment*** of $\triangle ACD$. If $BE = 3x + 8$ and CD = 4x + 32, **find** the value of x.



x = _____

If $m\angle ABE = 48^\circ$, **find** the $m\angle ACD$.

$m\angle ACD$ = _____

6. According to the triangle inequality, can 3 cm, 5 cm, and 9 cm be the three sides of a triangle? Why or why not?

7. If two sides of a triangle are 4 in and 11 in, complete the inequality for the length of the third side "x"

_____< x < _____

8. If you are given sticks of 100 ft., 140 ft., and 228.5 ft. would you be able to make a triangle? Why or why not? Support your answer with sound mathematical reasoning.

9. If two sides of a triangle are congruent, then what do you know about the angles opposite those sides?

10. The largest angle of a triangle is across from the _____ side, the smallest angle of a triangle is across from the _____ side.